INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

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(317) 232-8603
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June 25, 2003

TO: Interested Parties / Applicant

RE: W.M.S. Development LLC **019-17328-00112**
FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision - Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office Environmental Adjudication, ISTA Building, 150 W. Market Street, Suite 618, Indianapolis, IN 46204, **within eighteen (18) calendar days from the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures

FNPERAM.wpd 8/21/02

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June 25, 2003

Mr. William M. Scott
W. M. S. Development LLC
2515 New Albany - Charlestown Pike
Jeffersonville, Indiana 47130

Dear Mr. Scott:

Re: Exempt Construction and Operation Status,
019-17328-00112

The application from W. M. S. Development LLC, received on May 31, 2003, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following emission units, to be located at 2515 New Albany - Charlestown Pike, Jeffersonville, Indiana, are classified as exempt from air pollution permit requirements:

(a) One (1) crematory incinerator for human remains, identified as BLN-20-01, with a maximum capacity of 150 pounds per hour, using natural gas as supplemental fuel, at a rate of 1.5 MMBtu per hour, and exhausting through one (1) stack ST-01.

(b) One (1) crematory incinerator for animal remains, identified as BLP-02, with a maximum capacity of 150 pounds per hour, using natural gas as supplemental fuel, at a rate of 1.5 MMBtu per hour, and exhausting through one (1) stack ST-02.

The following conditions shall be applicable:

(1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:
  (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

  (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

(2) Pursuant to 326 IAC 4-2-2, the crematory incinerators shall:

  (a) consist of primary and secondary chambers or the equivalent;

  (b) be equipped with a primary burner unless burning wood products;

  (c) comply with 326 IAC 5-1 and 326 IAC 2;

  (d) be maintained properly as specified by the manufacturer and approved by the commissioner;

  (e) be operated according to the manufacturer's recommendations and only burn waste approved by the commissioner;

  (f) comply with other state and/or local rules or ordinances regarding installation and operation of incinerators;

(g) be operated so that emissions of hazardous material including, but not limited to, viable pathogenic bacteria, dangerous chemicals or gases, or noxious odors are prevented;

(h) not emit particulate matter in excess of five-tenths (0.5) pounds of particulate matter per one thousand (1,000) pounds of dry exhaust gas at standard conditions corrected to fifty percent (50%) excess air; and

(i) not create a nuisance or a fire hazard.

The operation of the incinerators shall be terminated immediately upon noncompliance with any of the above mentioned requirements.

This exemption is the first air approval issued to this source.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Original signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

AY/EVP

cc: File - Clark County
Clark County Health Department
Air Compliance - Ray Schick
Northwest Regional Office
Permit Tracking
Air Programs Section- Michelle Boner

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name: W. M. S. Development LLC
Source Location: 2515 New Albany - Charlestown Pike, Jeffersonville, IN 47130
County: Clark
SIC Code: 7261
Operation Permit No.: 019-17328-00112
Permit Reviewer: Adeel Yousuf / EVP

The Office of Air Quality (OAQ) has reviewed an application from W. M. S. Development LLC relating to the construction and operation of human and animal crematory incinerators.

New Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

(a) One (1) crematory incinerator for human remains, identified as BLN-20-01, with a maximum capacity of 150 pounds per hour, using natural gas as supplemental fuel, at a rate of 1.5 MMBtu per hour, and exhausting through one (1) stack ST-01.

(b) One (1) crematory incinerator for animal remains, identified as BLP-02, with a maximum capacity of 150 pounds per hour, using natural gas as supplemental fuel, at a rate of 1.5 MMBtu per hour, and exhausting through one (1) stack ST-02.

Existing Approvals

This new source has no existing approvals.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
ST-01	Human Crematory	25'	1.5	950	2000
ST-02	Animal Crematory	25'	1.5	1300	1850

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on May 21, 2003.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (Appendix A, pages 1 through 4).

Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	1.23
PM-10	1.33
SO_2	0.96
VOC	0.13
CO	1.21
NO_x	4.63
HAPs	negligible

(a) The potential to emit of all the regulated pollutants for the emission units at the source is lower than the registration applicability thresholds stated in 326 IAC 2-7-10.5(d)(4). Therefore, pursuant to 326 IAC 2-1.1-3(d)(3), this is an exempt source.

County Attainment Status

The source is located in Clark County.

Pollutant	Status
PM-10	attainment
SO_2	attainment
NO_2	attainment
Ozone	maintenance
CO	attainment
Lead	attainment

(a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. St. Joseph County has been designated as attainment or unclassifiable for ozone.

(b) St. Joseph county has been classified as attainment or unclassifiable for all other criteria pollutants.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than 100 tons per year,
(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
(c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

Federal Rule Applicability

(a) The two (2) natural gas fired crematory incinerators, each with maximum heat input rate of 1.5 MMBtu/hr and maximum charge capacity of 150 pounds per hour, are not subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.50, Subpart E) because the maximum charge capacity of each incinerator is below the rule applicability threshold of 50 tons per day.

(b) The two (2) natural gas fired crematory incinerators do not combust any hazardous waste as defined in 40 CFR 261. Therefore, the incinerator is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR 63, Subpart EEE).

State Rule Applicability - Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration

This source has the potential to emit of all criteria pollutants less than 250 tons per year, and is not one of the twenty-eight (28) listed source categories. Therefore, 326 IAC 2-2 does not apply.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of this source will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 2-6 (Emission Reporting)

This source is located in Clark County which is one of the specifically regulated counties, but the potential to emit VOC and NOx is less than ten (10) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 4-2-1 (Incinerators)

The two (2) natural gas fired incinerators, each rated at 1.5 MMBtu/hr, are subject to the requirements of 326 IAC 4-2-1. Pursuant to this rule, the incinerator shall:

(a) consist of primary and secondary chambers or the equivalent;

(b) be equipped with a primary burner unless burning wood products;

(c) comply with 326 IAC 5-1 and 326 IAC 2;

(d) be maintained properly as specified by the manufacturer and approved by the commissioner;

(e) be operated according to the manufacturer's recommendations and only burn waste approved by the commissioner;

(f) comply with other state and/or local rules or ordinances regarding installation and operation of incinerators;

(g) be operated so that emissions of hazardous material including, but not limited to, viable pathogenic bacteria, dangerous chemicals or gases, or noxious odors are prevented;

(h) not emit particulate matter in excess of five-tenths (0.5) pounds of particulate matter per one thousand (1,000) pounds of dry exhaust gas at standard conditions corrected to fifty percent (50%) excess air; and

(i) not create a nuisance or a fire hazard.

If any of the above result, the burning shall be terminated immediately.

The human and animal crematory incinerators have a maximum exhaust rate of 0.20 and 0.22 pounds of PM per 1000 pounds of dry exhaust gas, corrected to fifty percent (50%) excess air, respectively. Therefore, each incinerator is in compliance with this rule.

Conclusion

The construction and operation of the human and animal crematory incinerators shall be subject to the conditions of the attached proposed Exemption No. 019-17328-00112.

Appendix A: Emission Calculations

Company Name: W. M. S. Development LLC
Address City IN Zip: 2515 New Albany - Charlestown Pike, Jeffersonville, IN 47130
Permit No.: 019-17328-00112
Reviewer: Adeel Yousuf / EVP
Date: June 13, 2003

Uncontrolled Potential Emissions (tons/year)

Emissions Generating Activity			
Pollutant	Burner Natural Gas Combustion	Incineration	**TOTAL**
PM	0.00	1.23	1.23
PM10	0.10	1.23	1.33
SO2	0.00	0.96	0.96
NOx	1.30	3.33	4.63
VOC	0.10	0.03	0.13
CO	1.10	0.11	1.21
total HAPs	negl.	negl.	negl.
worst case single HAP	negl.	negl.	negl.
See attached spreadsheets from source for full calculations.			
Total emissions based on rated capacity at 8,760 hours/year.			

Controlled Potential Emissions (tons/year)

Emissions Generating Activity			
Pollutant	Burner Natural Gas Combustion	Incineration	**TOTAL**
PM	0.00	1.23	1.23
PM10	0.10	1.23	1.33
SO2	0.00	0.96	0.96
NOx	1.30	3.33	4.63
VOC	0.10	0.03	0.13
CO	1.10	0.11	1.21
total HAPs	negl.	negl.	negl.
worst case single HAP	negl.	negl.	negl.
See attached spreadsheets from source for full calculations.			
Total emissions based on rated capacity at 8,760 hours/year, after control.			

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **W. M. S. Development LLC**
Address City IN Zip: **2515 New Albany - Charlestown Pike, Jeffersonville, IN 47130**
Permit No.: **019-17328-00112**
Reviewer: **Adeel Yousuf / EVP**
Date: **June 13, 2003**

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
3.0	26.3

Two (2) crematory burners, each rated at 1.5 MMBtu/hr

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.1	0.0	1.3	0.1	1.1

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
See page 2 for HAPs emissions calculations.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100
Small Industrial Boiler
HAPs Emissions

Company Name: **W. M. S. Development LLC**
Address City IN Zip: **2515 New Albany - Charlestown Pike, Jeffersonville, IN 47130**
Permit No.: **019-17328-00112**
Reviewer: **Adeel Yousuf / EVP**
Date: **June 13, 2003**

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	2.759E-05	1.577E-05	9.855E-04	2.365E-02	4.468E-05

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	6.570E-06	1.445E-05	1.840E-05	4.993E-06	2.759E-05

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Appendix A: Emissions Calculations
Crematory Incinerator

Company Name: **W. M. S. Development LLC**
Address City IN Zip: **2515 New Albany - Charlestown Pike, Jeffersonville, IN 47130**
Permit No.: **019-17328-00112**
Reviewer: **Adeel Yousuf / EVP**
Date: **June 13, 2003**

W. M. S. Development LLC submitted the following emission data:
The following emission factors are based on the emissions test conducted by Southern Environmental Sciences, Inc. on a B & L Systems, Inc., N20 Series human crematory incinerator at Directors Service, Inc., located in St. Petersburg, Florida. This emissions test was conducted on March 3, 2003 for Particulates, CO, NOx, VOC and SO2 at an average maximum process weight rate of 151.66 pounds per hour. W. M. S. Development LLC is proposing to construct and operate the similar crematory incinerators manufactured by B & L Cremation Systems.

Average tested emissions at maximum process weight rate of 151.66 lb/hr

Pollutant	Emissions (lb/hr)
PM / PM10	0.14
CO	0.012
NOx	0.38
VOC	0.003
SO2	0.11

W. M. S. Development LLC is proposing to install and operate two (2) B & L Systems crematory incinerators consisting of:
One (1) human crematory, identified as BLN-20-01, and with maximum incineration capacity of 150 pounds per hour.
One (1) animal crematory, identified as BLP-02, and with maximum incineration capacity of 150 pounds per hour.

Emission Calculations:

Emissions from the two (2) W. M. S. crematories with combined maximum process weight rate of 300 pounds per hour are calculated by doubling the tested emissions at 151.66 pounds per hour.

Pollutant	Potential Emissions (lb/hr)	Potential Emissions (tons/yr)
PM / PM10	0.28	1.23
CO	0.024	0.11
NOx	0.76	3.33
VOC	0.006	0.03
SO2	0.22	0.96

Note: There are no known HAP emissions from this incinerator

Appendix A: Emissions Calculations
Medical Waste Incinerator Compliance with 326 IAC 4-2-2

Company Name: W. M. S. Development LLC
Address City IN Zip: 2515 New Albany - Charlestown Pike, Jeffersonville, IN 47130
Permit No.: 019-17328-00112
Reviewer: Adeel Yousuf / EVP
Date: June 13, 2003

Human Crematory Incinerator (BLN-20-01)

Potential PM emissions	0.62	lb/hr
Stack gas flow rate	2000.00	acfm
Gas temperature	950.00	deg F
Incinerator Throughput	150.00	lb/hr

Q,std = Volumetric flow rate at Standard Temperature

Q,std = 2000 acfm x 529 / 2328 deg R = **454.47** dscfm

Cs = PM Concentration

Cs = 0.62 lb/hr / 454.47 dscfm x 7000 gr/lb / 60 min/hr = **0.158** gr/dscf

Corrected to 50% excess air

Cs, corrected = 0.158 gr/dscf x (100+0)% / 150% = **0.105** gr/dscf

Ideal Gas Law

Specific Volume = R x T / P x Mw where

R = gas constant = 21.9(in Hg)(ft^3) / (lb mol)(deg R)
T = standard temp = 529 deg R
P = standard pressure = 29.45 in Hg
Mw = avg molecular weight of air = 29 lb/lbmol

Specific Volume = **13.565** cf/lb air

Cs, corrected = 0.105 gr/dscf x 13.565 cf/lb air = **1.428** gr/lb air

1.428 gr/lb air x 1/7000 lb pm/gr = 0.00020 lb PM/lb dry gas = **0.2040** lb PM/1000 lb dry gas

Maximum allowable particulate emission pursuant to 326 IAC 4-2-2 is 0.5 lb PM/1000 lb dry gas.
The human crematory incinerator is in compliance with 326 IAC 4-2-2.

Appendix A: Emissions Calculations
Medical Waste Incinerator Compliance with 326 IAC 4-2-2

Company Name: W. M. S. Development LLC
Address City IN Zip: 2515 New Albany - Charlestown Pike, Jeffersonville, IN 47130
Permit No.: 019-17328-00112
Reviewer: Adeel Yousuf / EVP
Date: June 13, 2003

Animal Crematory Incinerator (BLP-02)

Potential PM emissions	0.62	lb/hr
Stack gas flow rate	1850.00	acfm
Gas temperature	1300.00	deg F
Incinerator Throughput	150.00	lb/hr

Q,std = Volumetric flow rate at Standard Temperature

$$Q,std = 1850\ acfm \times \frac{529}{2328}\ deg\ R = \mathbf{420.38}\ dscfm$$

Cs = PM Concentration

$$Cs = \frac{0.62\ lb/hr}{420.38\ dscfm} \times \frac{7000\ gr/lb}{60\ min/hr} = \mathbf{0.171}\ gr/dscf$$

Corrected to 50% excess air

$$Cs,\ corrected = 0.171\ gr/dscf \times \frac{(100+0)\%}{150\%} = \mathbf{0.114}\ gr/dscf$$

Ideal Gas Law

$$Specific\ Volume = \frac{R \times T}{P \times Mw}$$ where

R = gas constant = $\frac{21.9(in\ Hg)(ft^3)}{(lb\ mol)(deg\ R)}$
T = standard temp = 529 deg R
P = standard pressure = 29.45 in Hg
Mw = avg molecular weight of air = 29 lb/lbmol

Specific Volume = **13.565** cf/lb air

Cs, corrected: 0.114 gr/dscf x 13.565 cf/lb air = **1.543** gr/lb air

1.543 gr/lb air x 1/7000 lb pm/gr = 0.00022 lb PM/lb dry gas = **0.2205** lb PM/1000 lb dry gas

Maximum allowable particulate emission pursuant to 326 IAC 4-2-2 is 0.5 lb PM/1000 lb dry gas.
The animal crematory incinerator is in compliance with 326 IAC 4-2-2.